

S/058/62/000/004/117/160  
AO61/A101

AUTHOR: Matyáš, M.

TITLE: The magnetic susceptibility of solid solutions of semiconducting compounds of A<sup>III</sup> B<sup>V</sup>

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 43, abstract 4E375  
(Chekhosl. fiz. zh., 1961, v. B11, no. 6, 461-463, English)

TEXT: By the measurement of the diamagnetic susceptibility of InSb - GaSb solid solutions it is found that the susceptibility  $\chi_{\text{mol}}$  for solid solutions of compounds with substituted A-element (AB-CB system) is a quadratic function of composition in accordance with the empirical formula:

$$\chi_{\text{mol}} = - \left\{ \frac{[(1-\alpha) Z_A + \alpha Z_C][(1-\alpha) Z_A + \alpha Z_C + Z_B]}{100} + 13 \right\} \cdot 10^{-6},$$

where Z denotes the number of electrons in the respective atom, and  $\alpha$  is the molar part of the compound that has been added (AC or CB). On the basis of this relation it can be decided, from  $\chi_{\text{mol}}$  measurements whether the two binary compounds form solid solutions or whether new phases arise from their combination.

[Abstracter's note: Complete translation]

A. Kikoin

Card 1/1

MATTIAS, Milos

Some experience in semiconductor physics in the Soviet Union.  
Pekroky mat fyz astr 7 no.2:111 '62.

MATYAS, Milos

Anniversary congress of the Association of Czechoslovak  
Mathematicians and Physicists. Pokroky mat fyz astr 7  
no.4:191-193 '62.

4/055/62/012/011/001/002  
D234/D308

24 7000  
AUTHOR:  
TITLE:

Matyáš, N.

Connection between magnetic susceptibility and chemical bonds of semiconducting compounds having sphalerite structure

PERIODICAL:

Chekhoslovatskiy fizicheskiy zhurnal, Seriya B, v. 12, no. 11, 1962, 838-842

TEXT:

ZnS were measured at room temperature by a method described previously by the author. Since the susceptibility increases in the order  $A_{IV}^2$ ,  $A_{III}B^V$ ,  $A_{II}B^VI$ ,  $A_{I}B^VII$ , the author assumes

$$\chi_G = \chi_{G_{cov}} + \Delta\chi_G, \quad (1)$$

where the first term denotes molar susceptibility of an ideal covalent compound, whose square root can be expressed by the empirical formula  $C_1 - C_2/a^2$  ( $C_1$ ,  $C_2$  are constants and  $a$  is the lattice constant).

Card 1/2

Connection between magnetic ...

Z/055/62/012/011/001/002  
D234/D308

stant). The second term of (1) was determined with the aid of this formula and plotted against  $\sqrt{E_G}$  ( $E_G$  = the energy of the forbidden band). The dependence is linear in four series of compounds: 1) GeGe, GaAs, ZnSe, CuBr, 2) SnSn, InSb, CdTe, AgI, 3) GeSi, GaP, ZnS, CuCl, 4) SnSi, InP, CdS. (Ideal covalent binding was assumed for GeSi and SnSi). With the aid of these relations one can estimate  $E_G$  when the susceptibility and the lattice constant are known, for instance  $E_G$  = approx. 3.2 eV in CuCl. There are 2 figures and 2 tables. JB

ASSOCIATION: Institut für Festkörperphysik der Tschechosl. A.d.W.  
(Institute of Solid State Physics, Czechoslovak AS)  
and Fakultät für technische Physik und Kernphysik  
d. Tschechischen techn. Hochschule in Prag (Department of Technical Physics and Nuclear Physics,  
Czech Polytechnic, Prague)

SUBMITTED: April 10, 1962

Card 2/2

MATYAS, Milos

The Physical Society in Great Britain. Pokroky mat fyz astr  
§ no.1:38-39 '63.

MATYAS, Milos

One hundred years of the Czechoslovak Chemical Society.  
Pokroky nat fyz astr 9 no.6:378 '64.

1 30112-66 LJP(c) (3G)  
ACC NR: AP6020592 SOURCE CODE: CZ/0028/65/000/006/0320/0324  
AUTHOR: Matyas, Milos (Prague) 69  
ORG: none E  
TITLE: Fundamental experimental knowledge of superconductivity 2  
SOURCE: Pokroky matematiky fyziky a astronomie, no. 6, 1965, 320-324  
TOPIC TAGS: superconductivity, critical magnetic field, specific heat  
ABSTRACT: This article discusses the historical development of knowledge of superconductivity during the last 60 years, the critical temperatures and critical magnetic fields of various elements, the Meissner effect, and the specific heat of elements in the normal and superconducting states. Orig. art. has: 5 figures, 5 formulas, and 1 table. [JPRS]  
SUB CODE: 20 / SUM DATE: none

Card 1/1

OKR



ACCESSION NR: AP4041522

Z/0065/64/000/003/0309/0321

AUTHOR: Bruska, Otakar (Brzhuska, Otakar); Matyas, Miroslav  
(Matiash, Miroslav); Mazanec, Karel (Mazanets, Karel)

TITLE: Contribution to the study of steel properties at high  
deformation rates

SOURCE: Kovove materialy, no. 3, 1964, 309-321

TOPIC TAGS: dynamic hardness, high deformation rate, Armco iron  
dynamic hardness, 30KhN2MA steel dynamic hardness, room temperature  
dynamic hardness, subzero temperature dynamic hardness, explosive  
forming, high energy rate forming

ABSTRACT: Armco iron and 30KhN2MA steel were subjected to dynamic  
hardness tests with the purpose of studying their behavior at high  
deformation rates. The method is based on shooting a projectile  
into a specimen. The dynamic hardness  $H_K$  is determined as the ratio  
 $E:w$ , where  $E$  is the energy consumed in the formation of the impression  
having a volume  $w$ . The dynamic hardness tester consists of four  
parts: 1) a device for projectile acceleration, 2) a device for

Card 1/3

ACCESSION NR: AP4041522

measuring projectile velocity, 3) a device for determination of ballistic pendulum deflection, and 4) a device for measuring the volume of the impression. A projectile 4—5 g in weight shot with a velocity of approximately  $130 \text{ msec}^{-1}$  and a kinetic energy of approximately 5 kg m hits a specimen placed in a ballistic pendulum. The deflection of the latter determines the consumed energy. The velocity of the projectile is determined by computer and two photo cells. The dynamic hardness ( $H_K$ ) of Armco iron at +20, -30, -78, and -196C amounts to 180, -200, -235, and -210  $H_K$ , i.e.,  $H_K$  has its maximum at -78C. The dynamic hardness of 30KhN2MA steel depends on heat treatment and has its maximum at -30C. The fact that  $H_K$  at first increases and then decreases is explained by the adiabatic character of the deformation process and the change of the value of specific heat. The cause of the different behavior of both tested materials has not yet been reliably explained. The dynamic hardness measurements, however, provided valuable findings on the mechanical properties of the materials at high deformation rates. These findings will make possible a more detailed determination of the conditions for shaping by unconventional methods, e. g., by explosive forming. Orig. art. has: 8 figures, 6 formulas, and 1 table.

Card 2/3

ACCESSION NR: AP4041522

ASSOCIATION: VAAZ, Ostrava; VUVZKG, Ostrava

SUBMITTED: 27Aug63

ENCL: 00

SUB CODE: MM

NO REF SOV: 006

OTHER: 004

Card 3/3

**MATIAS, Pavel, machinist (Czechoslovakia)**

**Fraternal association of workers is a guarantee of victory. Sov. profsoiny  
1 no.3:49 N '53.**

**(MIRA 6:12)**

**(Trade-unions--Congresses)**

MATYAS S.

MATYAS S. Sszrotka portable radio receiving set. p. 107.

Vol. 1, No. 3, Oct. 1956.

TELE-RADIO

TECHNOLOGY

Warszawa, Poland

So: East European Accession, Vol. 6, No. 2, Feb. 1957

MATYAS, V.

Heat of acorns, p. 228, AZ ERDO, (Orszagos Erdészeti Egyesület) Budapest,  
Vol. 5, No. 6, June 1956.

SOURCE: East European Accessions List (EEAL), Library of Congress,  
Vol. 5, No. 11, November 1956.

MATYAS, V.

AGRICULTURE

Periodical ERLESZITTUDOMANYI HOZILIMENYEK No. 1, 1958

MATYAS, V. Tests of estimating acorn production. p. 163.

Monthly List of East European Accessions (ELAI) LC, Vol. 8, No. 5,  
May 1959, Unclass.

MATYAS, Vilmos:

"Correlations between the weather and the yearly production in beech trees" by H.Wachter. Reviewed by Vilmos Matyas. Erde 83, 1964, 333-334. J1 '64.



MATIAS, Vladislav, inz.

Charging and discharging of semiconductor condensers. Slaboprudy  
obzor 24 no.9:556-557 S '63.

MATIAS, Vladislav

Zener quartz diodes made by Tesla as semiconductor condensers.  
Slaboproudy obzer 25 no.12,733-734 D '64.

MATYAS, Z.

Theory of the melting of ionic crystals. Z. Matyas (Univ. [unclear]). *Archiv der Physik*, 1954, 10, 3 (Pub. 1955), cl. C, 48, 91496. -- A theory of the melting of AgCl and AgBr is developed, based on the passage of Ag<sup>+</sup> ions to interstitial positions near the m.p. The entropy is max. when 1/2 of the Ag<sup>+</sup> ions are left in the lattice ( $g = 1/2$ ). Simplifying assumptions permit the calculation of free energy isotherms as functions of  $g$ . Each isotherm has a min. at  $g = 1/2$ , but below the m.p. there is another lower min. at  $g = 1$ , whereas above the m.p. this min. is higher or absent. The theory leads to values of the m.p., entropy of fusion, heat of fusion, and change in free energy on melting that agree well with expt. The theory can be extended to other ionic crystals with a NaCl lattice, if both ions are assumed to wander into interstitial positions. H. Nussenzweig

NB  
VI

6

of  
JF  
JL

CA MATYAS, Z.

9

Change of electrical resistance of alloys during aging.  
Z. Matyas (Prague Univ.). *Phil. Mag.* 60, 324-37 (1949).  
A derivation is given of the mechanism by which the  
cond. electrons in pure Al are scattered when an external  
field is applied. The change of the resistivity during  
aging can be predicted. Duraluminum and Al-Ag alloy  
in two different stages of aging are considered. In both  
the qual. predictions of the theory are in agreement with  
expt. and quant. results seem to be of the right order of  
magnitude.  
S. Tolansky

MATYAS, ZDENEK.

Vybrane kapitoly z hygieny a technologie masa jatecných  
zvirat a drubeze. (1. vyd.) Praha, Statni pedagogicke  
nakl., 1954. 197 p. (Ucebni texty vysokych skol)

SOURCE: EEAL - LC Vol. 5 No. 10 Oct. 1956

MATYAS, ZDENEK

Technologie potravin a surovin zivocisneho puvodu. (Vyd. 1) Praha, Statni pedagogicke nakl., 1956. 266 p. (Technology of food and of raw materials of animal origin; a university textbook. 1st ed.)

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

MATYAS, Z.

Rudolf Bohm and Vladimir Pleva's Mikroskopie masa a surovin zivocisneho puvodu  
(Microscopy of Meat and Raw Materials of Animal Origin); a book review. p. 222.  
(Prumysl Potravin, Vol. 8, No. 4, 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

CZECHOSLOVAKIA / Chemical Technology. Chemical Prod- H-28  
ucts and Their Application. Food In-  
dustry.

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 2885.

Author : ~~Matyas, Z.~~

Inst : Not given.

Title : The Possibility of Using Acetic Acid As A Pre-  
servative in the Meat Industry.

Orig Pub: Ceskosl. hyg., 1958, 3, No 2-3, 113-116.

Abstract: Wine vinegar (V) can be used on an industrial  
scale as a preservative for corned beef meat when  
refrigeration is not available. The use of V in  
various concentrations protected meat from micro-  
biological spoilage for seven days; a control  
sample showed the presence of surface decay on  
the second day. V does not retard the fermenta-  
tion processes in meat. The possible practical

Card 1/2



Matyas, Z.

COUNTRY : Czechoslovakia  
CATEGORY :

H-10

ABST. JOUR. : ZEMSKA, No. 16 1950, No.

58943

ABST. JOUR. : ZEMSKA, No. 16 1950, No.

ABST. JOUR. : ZEMSKA, No. 16 1950, No.

TITLE : On the Quality of Eggs and Poultry Products

ORIG. PUB. : Veterinarni, 3, No 3, 101-102 (1950)

ABST. JOUR. : The author discusses briefly the requirements which must be met by the veterinary and sanitary control of egg processing enterprises.  
P. Zvarova

CARD: 1/1

MATYAS, Zdenek, Doc., MVDr.

International symposium on the hygiene of food of animal origin.  
Vestník CSAZV 7 no.8:392-395 '60. (EEAI 10:3)

1. Veterinární fakulta Vysoké školy zemědělské a lesnické, Brno.  
(Food) (Animal products)

MATYAS, Zdenek

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: Doctor of Veterinary Medicine

Affiliation: Brno

Source: Prague, Veterinarství, Vol XI, No 5, 1961, page 181.

Data: "Veterinary Care in Meat Production."

GPO 981643

CZECHOSLOVAKIA

MATYAS, Z.

MATYAS, Z., (Affiliation not given).

"Some Problems of Veterinary Hygiene of Foods of Animal Origin."

Prague, Veterinarni Medicina, Vol. 8, No. 2, 63, pp 65-66.

Abstract: The article is an introduction to the current issue of the periodical which deals mainly with subjects of Food Hygiene. Importance of Veterinary Surgeons in this field is stressed.  
No references.

1/1

CZECHOSLOVAKIA

KRAL, E., <sup>MATYAS, Z.</sup> MATYAS, Z., HOLEC, J., (Affiliation not given).

"The Basis for Planning the Required Numbers of Veterinary Surgeons Needed in the Field of Hygiene of Foods. 1st Communications - Slaughterhouses."

Prague, Veterinarni Medicina, Vol. 8, No. 2, 63, pp 67-76.

Abstract (Authors' summary): An analysis of the activities and of time requirements of the veterinary service in the slaughterhouses was made. As a result of this study it seems that one veterinary surgeon with the assistance of a technician can provide inspection and supervision for the slaughtering of 13,404 animals each year.  
11 Tables, 7 Czech, 14 German references.

1/1

MATYAS, Zdenek, doc. MVDr.

Some problems of veterinary hygiene of food from animal products.  
Veter medicina 8 no.2:65-66 Mr '63.

Sensitivity of *Serratia marcescens* to some disinfectants in  
a solution or in the form of aerosols. Ibid.:103-110

1. Institute of Hygiene and Technology of Food, Faculty of  
Veterinary Medicine, Higher School of Agriculture, Brno.

KRAL, Emanuel, MVDr., prof.; MATYAS, Zdenek, doc. MVDr.; HOLEC, Josef,  
MVDr. CSc.

Data for planning the number of veterinarians in the food  
hygiene control. Pt. 1. Veter medicina 8 no.2:67-76 Mr '63.

1. Institute of Hygiene and Technology of Food, Faculty of  
Veterinary Medicine, Higher School of Agriculture, Brno (for  
Matyas and Holec).

CZECHOSLOVAKIA

MATIAS, Zdenek, Doc. MVDr, CSc.

Brno

Brno, Veterinarstvi, No 12, December 1966, pp 529-533

"Current situation and future prospects for hygiene of foodstuffs,  
with regard to teaching, research, and practice."



CZECHOSLOVAKIA

*MATYAS, Zdenek*

CERNY, Ludvik, Prof. M/Dr; MATYAS, Zdenek, doc. M/Dr, CSc; KREJCI, Jaroslav, M/Dr

None (for all)

None, Veterinarství, No 12, December 1966, pp 533-535

"Prospective goals in microbiology for hygiene of feedstuffs."

MATYASEK, V.; VAVRA, J.; KALOUS, E.

Problems of price calculation in the food industry. p. 57

PRUMYSL, POTRAVIN. Praha, Czechoslovakia, Vol. 10, no. 2, February 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 7, July 1959.  
Uncl.

STOROZHNIK, A.G.; MATYASH, A. Ye.

Continuous running machine for lapping cutters. Stan. i instr. 31  
no.5:33-34 My '60. (MIRA 14:5)

(Grinding machines)

MATYASH, A. ya

PHASE I BOOK EXPLOITATION

BOV/5583

17

Podkletnov, Ye. N., Stalin Prize Winner, ed.

Emal' i protsessy emalirovaniya (Enamels and Enameling Processes) Moscow, Mashgiz, 1961. 113 p. 4,000 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskii komitet Soveta Ministrov UkrSSR. Institut tekhnicheskoy informatsii.

Ed.: N. P. Onishchenko; Tech. Ed.: M. S. Gornostaypol'skaya; Chief Ed.: Mashgiz (Southern Dept.): V.K. Serdyuk, Engineer.

PURPOSE: This book is intended for engineering and technical personnel concerned with the research, production, and uses of enamel.

COVERAGE: This collection of articles on enamels and enameling processes is based on material presented at the first Ukraine-wide conference on the production of enamel and enameled equipment, organized by the State Scientific Technical Committee of the Ukrainian SSR, the Kiyev Sovnarkhoz, Chemical

Card 1/4

17

Enamels and Enameling Processes

SOV/5583

Society imeni Mendeleev, Scientific Technical Society of the Machine-Building Industry, and other sovnarkhozes, scientific research institutes, and planning organizations. [The name, place, and date of the conference are not given.] The following are discussed: old and new types of enamels, their composition, properties, uses, and methods of production; the production of enameled equipment (chemical apparatus, pipes, cisterns, etc.), and their use in the coal, chemical, food, and other industries; latest advances in the mechanization of enameling processes and techniques; the effect of underlying surfaces on the quality of enamel coatings; and methods of modifying the properties of enamel coatings, e.g., increasing their chemical stability. American and Chinese practices and production are also briefly discussed. No personalities are mentioned. There are 32 references: 22 Soviet, 7 English, and 3 German.

TABLE OF CONTENTS:

Tamel', V. M. Development of the Enamel Industry in the Ukrainian SSR	3
Smirnov, N. S. Prospects for Developing and Methods of Improving the Enamel Industry in the Urals, Siberia, and the [Soviet] Far East	11

Card 2/4

Enamels and Enameling Processes

SOV/5583

7

Vargin, V. V. Some Problems Regarding the Composition, Properties, and Technology of Enamels for Chemical Equipment	15
Podkletnov, Ye. N. Latest Technology of Enameling in an Electromagnetic Field With the Use of Automatic Machine Tools	22
Vargin, V. V., and L. L. Gutorova. Alkali-Resistant Enamels	33
Svetlov, V. A., N. S. Smirnov, and I. A. Kikovsky. Increasing the Chemical Stability of Enamel Coatings	44
Belyayev, G. I. Effect of Magnesium Oxide and Chromomagnesite on the Properties of Enamels Containing Little or No Boron	53
Idvinova, Ye. I. Effect of Metals on the Quality of Enamel Coatings	63
Matyash, A. Ya. Production and Use of Enamelled Equipment	72
Ostapchuk, Yu. G. Production of Enamelled Chemical Equipment at the "Krasnyy Oktyabr" Plant	77
Card 3/4	

SHAKHOV, P.N.; MATIASH, A.Ya.

Enameling of equipment for the chemical industry. Zhur.  
VKHO 8 no.3:334-336 '63. (MIRA 16:8)

. MATYASH, B., inzh.; ZHIBURTOVICH, N., inzh.

New building materials for housing construction based  
on local raw materials. Zhil.stroi. no.8:16-17 '60.  
(MIRA 13:8)

(Kuybyshev Province—Building materials)



MAKAROV, A.Ya.; KOFELYANSKIY, G.D., kand.tekhn. nauk, retsenzent;  
GORNYYKH, V.P., inzh., red.; MATYASH, B.F., inzh., red.;  
YAKSHANOV, Yu.S., inzh., red.; MIKHAYEV, N.I., red.

[Reference manual on building materials] Spravochnik po  
stroitel'nykh materialam. Kuibyshev, Kuibyshevskoe knizhnoe  
izd-vo, 1963. 647 p. (MIRA 17:7)

RABINOVICH, R.I. Prinsipali uchastiye: ALEGIAN, L.K., kand. sel'khoz. nauk; BARABANOVA, N.N.; BOSENKO, K.S.; VINNIK, V.V.; GRIGORCHUK, Ye.V.; GUMEROV, A.Kh.; DOBROCHASOV, D.F.; ZAMURAYEV, I.V.; ZAYTSEVA, A.G., kand. sel'khoz. nauk; KOL'TSOV, N.A.; LEVITIN, Kh.Z., kand. biol. nauk; LISITSKIY, B.Ya.; MATYASH, G.P.; MENTOV, A.V.; RABINOVICH, R.I.; SAL'NIKOV, V.V.; SVETCHNIKOV, I.V.; SIMONOV, P.K.; SMIRNOV, V.V.; SMIRNOV, L.P.; SMIRNOVA, V.I.; STEPANOVA, V.I.; TARASOV, A.A.; FILATOVICH, V.V., kand. sel'khoz. nauk; FEDOROV, N.G., kand. tekhn. nauk; TSAPLIN, M.F.; KHROMOV, L.V.; DAVYDOVA, I., red.; PAL'MINA, N., tekhn. red.

[Sverdlovsk in Agricultural Exhibition of 1959] Sverdlovskaya sel'khoziaistvennaya vystavka. Sverdlovsk, Sverdlovskoe knizhnoe izd-vo, 1960. 131 p. (MIRA 14:10)

1. Sverdlovsk. Sverdlovskaya oblastnaya sel'skokhozyaystvennaya vystavka, 1959.

(Sverdlovsk—Agricultural exhibitions)

24.7100,24.5600

77013  
SOV/56-37-6-53/55

AUTHORS: Galkin, A. A., and Matyash, I. V.

TITLE: Structure of Solid Hydrogen

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,  
Vol 37, Nr 6, pp 1831-1832 (USSR)

ABSTRACT: Measurements were made of the nuclear magnetic resonance (n.m.r.) of mono- and polycrystalline hydrogen at 4.2° K. Samples were cylindrical in form and obtained under various directions of thermal gradient relative to the axis of the crystal. The width and the shape of lines of monocrystals in the rotational diagrams was found to be practically identical to those obtained with polycrystalline hydrogen. The diagrams exhibited no anisotropy of the second momentum in the n.m.r. This served as the confirmation that the crystalline hydrogen has tetragonal lattice. There are 5 references; 4 Soviet, 1 Dutch.

Card 1/2

Structure of Solid Hydrogen

77013

SOV/56-37-6-53/55

ASSOCIATION: Inst. Radiophys. and Electronics Acad. Sciences Ukrain.  
SSR, USSR (Institut radiofiziki i elektroniki Akademii  
nauk Ukrain'skoy SSR, SSSR)

SUBMITTED: October 13, 1959

Card 2/2

83745

S/056/60/038/004/038/048  
B006/B056

24.6400

AUTHORS:

Galkin, A. A., Matyash, I. V.

TITLE:

Investigation of the Nuclear Resonance in an Adsorbed Gas

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,  
Vol. 38, No. 4, pp. 1332 - 1334

TEXT: For the purpose of investigating the properties of adsorbed gases, nuclear paramagnetic resonance offers suitable means, because conclusions may be drawn from the shape of the resonance curves as to the interaction of the adsorbed molecules and the effect of the backing. In the present "Letter to the Editor", the authors describe investigations carried out by the spin-echo method, of nuclear paramagnetic resonance on thin layers of hydrogen, water, and methane adsorbed on activated carbon. The block diagram of the apparatus used is shown in Fig. 1, and is briefly described in the introduction. The magnetic field (3300 oe) was generated by a permanent magnet with a pole-piece diameter of 110 mm and a gap width of 40 mm. The apparatus permitted measurement of the longitudinal and transverse relaxation times ( $T_1$  and  $T_2$ ) within the

Card 1/3

Investigation of the Nuclear Resonance in an  
Adsorbed Gas

83745

S/056/60/038/004/038/048  
B006/B056

range from  $10^{-4}$  to 10 sec. To determine  $T_1$ , three pulses were applied to the sample, and by analyzing the signal intensity of the stimulated echo as a function of the time between the first and the third pulse, the relaxation time was determined. Investigation of the spin-echo signal intensity as a function of the time between two pulses also made it possible to calculate  $T_2$  and the self-diffusion coefficient (the experimental method is described in Ref. 5). Fig. 2 shows such a spin-echo oscillogram from which  $T_2$  was determined for hydrogen adsorbed on carbon at  $77^\circ\text{K}$ . The  $T_1$  and  $T_2$  values thus determined as well as estimates of the self-diffusion coefficient (D) are given in a table for the layers investigated here. Also the activation energies (Q) were estimated and are also given, as well as the measured resonance-line widths  $\Delta H$ . Thus,  $\Delta H$  for a monomolecular  $\text{H}_2$  layer at  $77^\circ\text{K}$  equals 0.2 oe, and at  $20.4^\circ\text{K}$  it equals 2 oe. For these two temperatures,  $T_1$  was measured as amounting to  $5 \cdot 10^{-3}$  and  $10 \cdot 10^{-3}$  sec, respectively, and  $T_2$  as  $1.3 \cdot 10^{-3}$  and

Card 2/3

83745

Investigation of the Nuclear Resonance in an Adsorbed Gas S/056/60/038/004/038/048  
B006/B056

$0.1 \cdot 10^{-3}$  sec, respectively;  $D \approx 2.4 \cdot 10^{-2}$  cm<sup>2</sup>/sec and  $Q \approx 590$  joules/mole.  
There are 2 figures, 1 table, and 6 non-Soviet references.

ASSOCIATION: Institut radiofiziki i elektroniki Akademii nauk Ukrain-  
skoy SSR (Institute of Radiophysics and Electronics of  
the Academy of Sciences Ukrainskaya SSR)

SUBMITTED: December 19, 1959

X

Card 3/3

35097

S/185/62/007/001/007/004  
D299/D302

24.6300

AUTHORS: Malkin, O.O., and Matvash, I.V.

TITLE: Study of nuclear magnetic relaxation of adsorbed gases by the spin-echo method

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 1, 1962, 54 - 64

TEXT: The temperature dependence was studied of the relaxation time  $T_1$  and  $T_2$  of hydrogen molecules and helium atoms, adsorbed on charcoal and silica gel.  $T_1$  and  $T_2$  were measured by E.L. Hahn's method (Ref. 1: Phys. Rev., 80, 580, 1950), as well as by the method of H.V. Carr and E.M. Purcell (Ref. 2: Phys. Rev., 94, 630, 1954). The measuring apparatus included a high-frequency modulator, a h.-f. bridge, h.-f. amplifier, and the oscillograph MO-4 (10-4). A magnetic field of 3300 oersted was produced by a permanent magnet. A figure shows the temperature dependence of the spin-lattice relaxation time  $T_1$  of  $He^3$ -atoms, adsorbed on charcoal. Although the distance between the atoms ( $10^{-7}$  cm) was by far greater than in the liquid state, the re- X  
Card 1/3



S/185/62/007/001/007/014  
D299/D302

Study of nuclear magnetic relaxation ...

laxation time  $T_1 \approx 10^{-2}$  sec., i.e. by several orders of magnitude smaller than for gaseous or liquid  $\text{He}^3$ . Such a decrease in relaxation time can be only explained by the effect of the adsorbent surface; this effect was found to be equivalent to the effect of oxygen at a pressure of 10 atm. Another figure shows the temperature dependence of the spin-spin relaxation time  $T_2$ .  $T_2$  is almost by one order of magnitude smaller than  $T_1$ . This is further proof that the relaxation mechanism under consideration differs from that for gases. The magnitude of  $T_2$  ( $\sim 10^{-3}$  sec) shows that the spin-spin relaxation time is also influenced by interaction with the paramagnetic backing. If the adsorbent surface has paramagnetic particles, it is possible to estimate the diffusion coefficient  $D$ , by means of a formula involving  $T_1$  and the number of paramagnetic particles  $N_{\text{par}}$ ; one obtains  $D \approx 10^{-4}$  cm<sup>2</sup>/sec., for  $N = 10^{20}$  cm<sup>-3</sup>. In the case of adsorbed hydrogen, it is necessary to take into account both inter- and intramolecular interactions. From the formula for spin-spin relaxation in the presence of intramolecular interactions it follows that the correlation time  $\tau_c \approx 10^{-8}$  sec. The temperature dependence of  $T_2$  can be explained by the

Study of nuclear magnetic relaxation ... S/185/62/007/001/007/01.  
D299/D302

increase in  $\tau_c$  with decreasing temperature. An analysis of the experimental results shows that the temperature dependence of  $T_2$  is mainly determined by intermolecular interactions, and the dependence on pressure by intramolecular relaxation. The obtained values of  $T_2$  and  $T_2$  and their dependence on temperature and pressure, do not differ appreciably from those for hydrogen adsorbed on silica gel. There are 11 figures and 13 references: 1 Soviet-bloc and 12 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: George W. Smith, Robert M. Houtsley, Phys. Rev., 117, 732, 1960; W.M. Fairbank, E. Adams, Dwight, Physica, 24, 134, 1958; I.M. Goodkind, W.M. Fairbank, Phys. Rev. Lett., 4, 458, 1960; R.H. Power, Phys. Rev., 117, 1185, 1960.

ASSOCIATION: Fizyko-tekhnichnyy instytut nyz'koykh temperatur AN  
URSR (Physico-technical Institute of Low Temperatures  
of the AS UkrRSR), Kharkiv

SUBMITTED: July 4, 1961

Card 3/3

S/192/63/004/001/002/003  
D204/D307AUTHORS: Matvash, I.V., Piontkovskaya, M.A., Tarasenko, L.M.  
and Tyutyunnik, R.S.

TITLE: Proton relaxation in zeolitic water

PERIODICAL: Zhurnal strukturnoy khimii, v. 4, no. 1, 1963,  
106-107

TEXT: It is noted that although the structure of many zeolites has been studied in some detail both experimentally and theoretically, there is little information about molecular bonding forces in zeolitic water. This has been largely due to experimental difficulties encountered with chemical and spectroscopic (X-ray and infrared) methods. The present work was undertaken to obtain further information about zeolites and to determine the NMR line widths for artificial zeolites. The following were investigated: KA, NaA, CaA, LiA and MgA. It was found that the derivatives of the absorption lines of KA, CaA and MgA did not exhibit detectable splitting which ascribed to the fact that the specimens had not lower than fourfold symmetry axes and the sorption cavities were nearly spherical. Nea-Card 1/2

Proton relaxation ...

S/192/63/004/001/002/003  
D204/D307

sured NMR line widths as functions of the relative amount of water appear to confirm that the spin-spin relaxation time does depend on the relative amount of water as reported by Matyash et al (this journal, 2, 214, 1962). On the other hand the self-diffusion coefficient of water molecules in zeolites is universally proportional to the line width  $\Delta H$ . The correlation between  $\Delta H$  and  $\tau_i/\tau$  is shown below

Cation	K	Na	Ca	Li	Mg
$\Delta H$ oe	0.08	0.09	0.17	0.17	0.48
$\tau_i/\tau$	0.05	1.46	2.16	3.48	8.63

where  $\tau_i$  is the mean life of water molecules near the corresponding cation and  $\tau$  is the corresponding equilibrium value in pure water. There are 2 figures and 1 table.

ASSOCIATION: Fiziko-tehnicheskiy institut nizkikh temperatur AN USSR (Physico-Technical Low Temperature Institute of the AS UkrSSR) Institut fizicheskoy khimii AN USSR (Institute of Physical Chemistry of the AS UkrSSR)

SUBMITTED: May 28, 1962

Card 2/2

MATYASH, I.V.; GALKIN, A.A. [Halkin, O.O.]; TARASENKO, L.M.

Proton magnetic relaxation in methane. Ukr. fiz. zhur. 8  
no.1:39-41 Ja '63. (MIRA 16:5)

1. Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR,  
Khar'kov.

(Protons) (Nuclear spin) (Methane)

MATYASH, I.V.; TORYANIK, A.I.; YASHKICHEV, V.I.

Mobility of water molecules in aqueous solutions of NaCl, KCl,  
and KI. Zhur. strukt. khim. 5 no.5:777-778 S-0 '64  
(MIRA 18:1)

1. Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR i  
Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova  
AN SSSR.

TARASEVICH, Yu.I.; OVCHARENKO, F.D., akademik; MATYASH, I.V.; MANK,  
V.V.; TORYANIK, A I.

Nuclear magnetic resonance of the protons of water adsorbed on  
montmorillonite. Dokl. AN SSSR 156 no. 4:926-928 Je '64.

(MIRA 17:6)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova  
AN UkrSSR i Fiziko-tekhnicheskii institut nizkikh temperatur AN  
UkrSSR. 2. AN UkrSSR (for Ovcharenko).

L 00717-66 BWT(m) DIAAP

ACCESSION NR: AP5014235

UR/0386/65/001/002/0022/0025

AUTHOR: Matyash, I. V.; Doroshev, V. D.; Ravenko, Yu. F.

TITLE: Observation of transitions between hyperfine sublevels in paramagnetic atoms

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 3, 1965, 22-25

TOPIC TAGS: hydrogen, paramagnetic gas, fine structure, electron transition

ABSTRACT: A detailed investigation of hyperfine splitting of the energy sublevels in atoms can be useful in studying electron-nuclear interactions, the state of the electron shell in the atom, the nature of intermolecular interactions, etc. Previous studies on precise determination of hyperfine interaction in the hydrogen atom have revealed transitions with  $\Delta M = 0$  in a longitudinal magnetic field of 0.06 oersted. There are no reports in the literature on the observation of transitions between hyperfine sublevels with  $\Delta M = \pm 1$ . In this paper, the author reports on observations of this type in elemental hydrogen. A videospectroscope with synchronous detection was used covering the 1500-1000 Mc range. The derivative of the

Card 1/2



L 00717-66

ACCESSION NR: AP5014221

12  
Absorption lines corresponding to transitions of  $F = 1, M = -1 \rightarrow F = 0, M = 0$  in elemental hydrogen is shown in fig. 1 of the Enclosure for a frequency of 1377.5 Mc in a 27 oersted field. "The authors are grateful to Corresponding member AN USSR A. A. Galkin for interest in the work, and to A. I. Petunin and V. G. Pityayev for participation in building the cryostat." Orig. art. has: 1 figure, 1 table.

ASSOCIATION: Fiziko-tekhnicheskii institut nizkikh temperatur Akademii nauk Ukrainy SSR (Physicochemical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR)

CLASSIFIED: 200-005

ENCLOSURE: 01

SUB CODE: NP

DO NOT COPY: 001

OTHER: 005

11 00737-66

ACCESSION NR: AP501423:

ENCLOSURE: 01

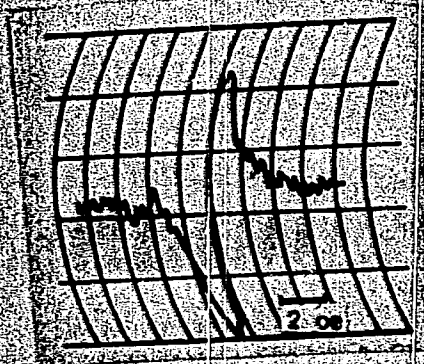


Fig. 1. Derivative of the absorption line for transitions between hyperfine sublevels in elemental hydrogen.

Card 3/3

STEPANOV, V. M.; MATYASH, L. F.

Preparation of p-(chloromercuri)benzoyl chloride. Zhur. ob.  
khim. 33 no.1:316-317 '63. (MIRA 16:1)

1. Institut khimii prirodnykh soyedineniy AN SSSR i Institut  
biofiziki AN SSSR.

(Benzoyl chloride).

MATYASH, L.F.; STEPANOV, V.M.

Synthesis of p-mercuribenzoic acid. Izv.AN SSSR. Ser.khim.  
no.1:111-116 Ja '64. (MIRA 17:4)

1. Institut khimii prirodnnykh soyedineniy AN SSSR i Institut  
biofiziki AN SSSR.

MATYASH, L.F.; STEPANOV, V.M.

Preparation of gramicidin C derivatives containing heavy atoms.  
Zhur. ob. khim. 34 no. 5:1658-1661 My '64. (MIRA 17:7)

1. Institut khimii prirodnikh soedineniy AN SSSR i Institut  
biologicheskoy fiziki AN SSSR.

AVAYEVA, S. M.; BOTVINIK, M. M.; VAFINA, M. G.; <sup>S</sup>MATYAZH, L. F.

Seryl phosphates and pyrophosphates. Part 2: Behavior of bis  
(methyl ester of N-car~~be~~benzoxy~~oryl~~ )-phenyl phosphate in HBr  
solution in organic solvents. Zhur. ob. Khim. 34 no. 6: 1754-1757  
Je '64. (MIRA 17:7)

38222  
S/032/62/028/006/006/025  
B110/B101

11.0130

AUTHORS: Morekhin, M. G., Ageyev, S. I., Matyash, O. Ye., and Chechina, T. G.

TITLE: A colorimetric method of determining the water content in kerosene

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 6, 1962, 670

TEXT: White, anhydrous  $\text{CuSO}_4$  added to hydrocarbons for the purpose of determining their water content formed a blue crystal hydrate with the water. The standards were prepared from 1 liter fuel filtered off with calcined copper sulfate was mixed with 0.2, 0.4, 0.6, 0.8, or 1.0 g of water and filtered off with glass filters containing freshly calcined  $\text{CuSO}_4$ . The color filtrates stored under exclusion of air remained usable for one month. The fuel to be analyzed was treated similarly, and the resulting color shade was compared with the standards. In this way, an amount of 0.30 g/liter was ascertained as compared with calculated water content of 0.28 g/liter, and 0.20 g/liter as compared with 0.175 g/liter.  
Card 1/1

KOTEL'NIKOV, N.V.; ANDREYEV, P.G.; MATYASHA, R.N.; SYSOYEV, G.N.;  
DEKAMILLI, G.M.

Large panels made of reinforced expanded clay concrete [Suggested  
by N.V. Kotel'nikov and others]. Rats. i izobr. predl. v stroit.  
no.6:7-11 '58. (MIRA 11:10)  
(Concrete slabs) (Ceilings)



KOTEL'NIKOV, N.V.; MATYASH, R.N.; ANDRUSYEV, P.G.; SEEDYUKOV, N.P.

Making concrete wall blocks with flues in construction yards  
[Suggested by N.V. Kotel'nikov and others]. Rats. 1 izobr.  
predl. v stroi. no.6:14-19 '58. (MIRA 11:10)  
(Concrete blocks)

KAZAKOV, Aleksandr Aristarkhovich; DAVYDOVSKIY, Vladimir Mikhaylovich;  
ZHIL'TSOV, P.N., inzh., retsenzent; MATYASH, S.Ye., inzh., retsen-  
zent; NIKOL'SKIY, V.A., inzh., retsenzent; STORCHUN, N.A., inzh.,  
retsenzent; MARENKOVA, G.I., inzh., red.; NOVIKAS, M.N., inzh., red.;  
BOBROVA, Ye.N., tekhn. red.

[Automatic control, remote control, and communication systems in rail-  
road transportation] Ustroistva avtomatiki, telemekhaniki i sviazi na  
zheleznodorozhnom transporte. Izd.3., perer. i dop. Moskva, Vses.  
izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961.446 p.

(Railroads--Electronic equipment) (Automatic control) (MIRA 14:12)  
(Remote control)

YERYKALOV, Yu.G.; SPRYSKOV, A.A.; MATYASH, V.K.

Orientation during the substitution in the aromatic series. Part 14:  
Isomerization of trichlorobenzenes in the presence of complex cata-  
lysts. Zhur.ob.khim. 34 no.1:237-240 Ja '64. (MIRA 17:3)

1. Ivanovskiy khimiko-tekhnologicheskii institut.

YASHEVICH, V.V.

8(3)

p 3

PHASE I BOOK EXPLOITATION

SOV/1386

Moscow. Nauchno-issledovatel'skiy institut postoyannogo toka

Peredacha energii postoyannym i peremennym tokom (Power Transmission by Direct and Alternating Current) Moscow, Gosenergoizdat, 1958. 334 p. (Series: Its: Izvestiya, sb. 3) 3,350 copies printed.

Ed.: Pintsov, A.M.; Tech. Ed.: Voronetskaya, L.V.; Editorial Board: Shchedrin, N.N., Doctor of Technical Sciences, Corresponding Member, Uzbek SSR Academy of Sciences, Professor (Chief Ed.); Gertsik, A.K., Engineer; Yemel'yanov, V.I., Candidate of Technical Sciences; Pimenov, V.P., Candidate of Technical Sciences; Pintsov, A.K., Candidate of Technical Sciences; Posse, A.V., Candidate of Technical Sciences; Sena, L.A., Doctor of Physical and Mathematical Sciences, Professor; Sonin, M.R., Engineer; Shekhtman, M.G., Candidate of Technical Sciences.

**PURPOSE:** This collection of articles, issued by the USSR Ministry of Electric Power Stations, is intended for scientists, engineers and designers of high-voltage overhead transmission lines.

Card 1/13

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

**COVERAGE:** The collection covers various problems connected with d-c and a-c high-voltage transmission lines, gives theoretical fundamentals of these problems and describes experimental investigations and practical conclusions. References appear separately after each article.

**TABLE OF CONTENTS:**

**SECTION I. DIRECT CURRENT**

Aleksandrov, D.D., N.F. Olendzskaya, and S.V. Ptitsyn . Investigation of Electric Strength of High-voltage Mercury Rectifiers  
Experimental investigation of mercury rectifiers was extensively carried out recently by NIPT of MES (Direct-Current Scientific Research Institute of USSR Ministry of Electric Power Stations) in substations of the Kashira-Moscow and Stalingrad-Donbass electric transmission systems. The "circulation manometer", recently developed by NIPT, made it possible to investigate the effect of foreign gas admixtures in mercury vapor on the electric strength of a high-voltage rectifier. The results of this investigation have now been introduced in practice. There are 9 diagrams and drawings, and 13 references, of which 5 are Soviet, 5 English and 3 French.

5

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Panov, I.P. Dielectric Ignitor for Cathode Spot Firing  
Experimental investigation of cathode spot firing carried out in the laboratories of NIPT has proved that dielectric ignitors are free of the many disadvantages characteristic of semiconductor ignitors. Dielectric ignitors are recommended for use not only in mercury rectifiers, but also in various gas-discharge devices where forced repetitive firing is required. There are 9 diagrams and drawings and 7 references, of which 4 are English and 3 Soviet.

20

Matyashevich, V.V. Formation of Mercury Condensate in an Operating Rectifier

Investigation has been carried out on the effect of mercury condensate droplets on the operating stability of mercury rectifiers. Experimental results made it possible to make recommendations on operating techniques and some design changes as well. There are 7 diagrams and drawings and 5 references, all Soviet.

31

Dolgikh, V.A., and N.I. Lavrov. Investigation of Voltage Distribution in the Plate Circuit of a High-voltage Mercury Rectifier

Card 3/13

43

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Investigations carried out by V.D. Andreyev and B.G. Mendelev in 1949-1950 at VET on voltage distribution in the plate circuit of a type V-1 (VR-50/120) mercury rectifier showed considerable unevenness of distribution. The recommendation was to increase the power of the plate voltage divider. In 1953 at the Electrovacuum Laboratory of NIPT a series of measurements was completed by V.A. Dolgikh, I.G. Goloshchekin and N.I. Lavrov (and in 1954 V.A. Ivanchenko) on the dependence of voltage distribution on operating conditions. The measurement method was developed by L.N. Volkov and D.D. Knyazev and was based on the use of an oscillograph and a capacitive voltage divider. In conclusion, the authors recommend some changes in operating practice and in design. There are 3 tables of oscillograms, 4 diagrams and 5 Soviet references.

Gertsik, A.K. Ionization Characteristics of Paper-Oil Capacitor Insulation During Application of Voltage With a Distorted Wave Form

62

The above characteristics were obtained as a result of experimental investigation carried out in NIPT laboratories by the author and junior scientists V.P. Matveyev and D.S. Lavrov. There are 13 diagrams and drawings and 14 references, of which 7 are Soviet and 7

Caru 4/13

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Merkhalev, S.D. Wet Flashover Voltage Characteristics of Insulators in D-C Transmission Lines

89

The investigation was carried out at NIPT by the author on P-7, Sht-35, IShD-35, KO-400 and MT-220 type insulators. There are 6 diagrams and drawings and no references.

Groys, Ye.S. Insulation Test Voltage Requirements in the Stalingrad GES-Donbass Transmission System

100

This article is the result of the author's experience gained from his participation in designing the Stalingrad GES-Donbass transmission system. D-c transmission is planned for a distance of 470 km at 800 KV and transmitted power of 750 Mw. There are 3 tables, 3 drawings and 5 Soviet references.

Posse, A.V. and A.M. Reyder. Series Connection of Bridge Rectifiers and Rectifiers in a D-C Transmission System

115

Mercury rectifiers produced today for d-c power transmission are designed for a voltage of about 100 kv. For transmission at 400 kv

Card 5/13



Power Transmission by Direct and Alternating (Cont.)

SOV/1386

up to 600 kv, it is necessary to employ a cascade connection of bridge rectifiers, with one or several rectifiers in the arm of each bridge. The best combination of the number of bridges and the number of rectifiers in the arm of each bridge has not yet been definitely chosen. The difficult problems connected with this choice were investigated by NIPT in the Kashira-Moscow h-v d-c transmission line. This article gives the results of investigation and makes recommendations. There are 2 tables, 7 oscillograms, 1 diagram and 3 references, of which 2 are Soviet and 1 German.

Shekhtman, M.G. and N.A. Shipulina. Parameters of Equipment of Conversion Substations in the Kashira-Moscow D-C Transmission Line

129

Firing of mercury rectifiers causes current oscillations in a tens and hundreds kc/sec frequency range. Study of this source of radio interference requires exact knowledge of equipment parameters for frequencies up to 1 Mc. The authors describe methods of measuring parameters and discuss the results obtained in the experimental Kashira-Moscow d-c transmission line. The three data tables are recommended for practical use for those working in radio interference suppression. There are 6 diagrams and no references.

Card 6/13

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Shekhtman, M.G. Damping of Plate Voltage Oscillations After Extinction of  
of Mercury Rectifiers in Conversion Substations

143

Experimental investigation was carried out by NIPT in the Kashira-Moscow d-c transmission line on damping of voltage oscillations caused by extinction of one or more mercury rectifiers in substations. The author describes this investigation and discusses the results. He also explains Engineer V.A. Merzhayevskiy's method of calculating the parameters of damping circuits, especially of power transformers. There are 3 tables, 3 diagrams, 1 appendix and no references.

Ishukov, N.D. Damping of Voltage Oscillations in Overhead D-C Transmission Lines (as applied to the Stalingrad-Donbass transmission line)

161

Theoretical and experimental investigations were carried out by VET and NIPT in the experimental Kashira-Moscow d-c transmission line on damping of voltage oscillations. Technical data from the Sweden-Gotland d-c transmission line were used by the author. The results of these investigations were put into practice in the Stalingrad-Donbass transmission line, chiefly according to recommendations of M.G. Shekhtman, V.M. Kvyatkovskiy, V.N. Vyatkin, N.A. Kanashchenko and A.A. Akopyan. There are 11 oscillograms and diagrams and 5 references, of which 2 are Soviet, 1 English, 1 Swedish, and 1 German.

Card 7/13

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Shiryayev, V.I. Grid Control System in the Kashira-Moscow D-C Transmission Line

181

The author explains a grid control system for switching-on mercury rectifiers in substations according to a definite sequence. He also forms practical conclusions and makes recommendations. There are 10 diagrams and 4 Soviet references.

Tomasov, V.V. Application of Germanium Diodes and Triodes in the Primary Trigger Pulse Circuit of a Grid Control System

197

The replacement of peak transformers or vacuum tubes in the above type of circuit with semiconductor diodes and triodes produces many advantages, especially in reliability, service life, power consumption and overall reduction in size of apparatus. The control and protection laboratory of NIIFT carried out research on various aspects of the problem and worked out the design of this circuit (IPIT -- istochnik pervichnykh impulsov na poluprovodnikakh). There are 4 diagrams and 1 Soviet reference.

CONT. 1

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Berlin, Ye.M. Current Regulator for H-V D-C Transmission Lines

201

A current regulator, developed by Tekhbyuro MES and installed in the Kashira-Moscow d-c line, proved to be too complicated and not sufficiently reliable because of the great number of tubes required (about 20). Another type of current regulator (a contactless type developed in 1944 by Professors I.L. Kaganov and A.A. Sakovich) also was found unsuitable due to its lag and narrow zone of regulation (50°-60°). The author was commissioned to design a "tubeless" current regulator, which he completed in 1952. Experimental investigations on it proved that the previous disadvantages were removed. There are 5 diagrams and 3 Soviet references.

Melik-Sarkisov, B.S. Investigation of Shunting Devices for D-C Transmission Lines

210

Investigations were carried out by NIPT in the Kashira-Moscow transmission line on the use of shunting devices during repair of mercury rectifiers, and without interruption of electric transmission. Shunt rectifiers and shunt disconnectors were tested and approved for use in the Stalin-grad-Donbass system. There are eleven diagrams and no references.

Card 9/13

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Shekhtman, M.G. Electromagnetic Power of a Synchronous Machine  
Operating With a Rectifier as a Load

225

The author explains the theory of synchronous machines operating at full power against mercury rectifiers, and discusses the conditions of operation of synchronous machines from the point of view of their electromagnetic power. There are two diagrams and no references.

Shipulina, N.A. Bridge System With Capacitors Connected in Series To  
Circuit Windings of the Transformer

234

The author explains the theory and discusses the results of experimental investigation on the above problem. There are 12 diagrams and no references.

Mel'gunov, N.M. Basic Features of a System With Bridge Converters  
Connected Through Capacitors in D-C Transmission Lines

255

The author explains the theory and practical application of this system, which consists in the possibility of connecting bridge converters to an a-c network not through transformers, as is usually done, but through a bank of capacitors (N.M. Mel'gunov holds author's certificate No.105207, 1952, on this method). There is 1 appendix, 16 oscillograms and 5 Soviet references.

Card 10/13

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Kuchinskiy, G.S. The Possibility of Using Cable Paper in the Manufacture of Power Capacitors For D-C Transmission Lines 282

The author describes a method of reducing the cost of capacitor batteries operating in ripple voltage circuits by using cable paper in their manufacture. Cable paper costs 10 times less than conventional capacitor paper but its electric strength also is less and therefore its thickness must be greater. In determining the cost of Kva capacitors the author draws on the experience of the high-voltage laboratory of LPI (Leningradskiy politekhnicheskii institut) where cable-paper capacitors for d-c and ripple voltages have been produced on a semi-industrial scale since 1938. The technical editor suggests that plants manufacturing capacitors consider the author's results when producing capacitors for the above-mentioned conditions. He notes, however, that the cost relationships advanced by the author cannot yet be considered justified owing to the lack of operating experience which would indicate a long service life of cable-paper capacitors in comparison with conventional capacitors. In his comparisons the author used 35-40 Kv/mm as the working voltage density. There are 2 diagrams and 4 Soviet references.

Card 11/13

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Kraychik, Yu.S. and A.M. Pintsov. Electrical Parameters of D-C Transmission Lines With Single-core Metal-sheathed Cables

289

The author obtains design parameters and equivalent circuits of d-c transmission lines consisting of single-core cable with a viscous saturant and lead or aluminum sheathing. There are 6 diagrams and 3 Soviet references.

SECTION II. ALTERNATING CURRENT

Koshcheyev, L.A. and Yu.A. Rozovski. Static Stability of Long-distance Electric Transmission Lines With Auxiliary Synchronous Condensers

299

NIPT has carried out an investigation on comparative stability of long distance transmission lines with and without synchronous condensers. The investigations were carried out in the Stalingrad GES - Moscow line. The authors describe the tests and their results. They mention experimental work done by A.I. Kazachkov, V.A. Anreyuk, A.P. Zhilin and A.V. Burmistrov. I.A. Kosov and Ye.F. Arzamastsev participated in developing the stability comparison model. There are 7 diagrams and 7 references, all Soviet.

Card 12/3

Power Transmission by Direct and Alternating (Cont.)

SOV/1386

Tikhodeyev, H.N. and A.N. Tushnov. Flashover Voltages in Wide Air Spaces of A-C Lines

313

The intensive Soviet drive for construction of 400-KV and, in the near future, of 500 - 650 KV transmission lines caused GOST and NIPPT to commission the author to carry out a thorough investigation of known test results in the USA and new experimental work on this problem. The results have now been introduced into practice in transmission lines. The equivalent circuit method for cascade transformers was worked out by A.K. Gertsik. There are 6 diagrams and 13 references, of which 6 are English, 5 Soviet and 2 German.

Filippov, A.A. Method of Calculating Corona in Three-phase Transmission Lines With Bundle Conductors and a Wide Bundle Span

324

The author explains the application of bundle conductors to reduce the effects of corona and describes the method of calculating the charges and designing the bundle conductors. The results of his findings were checked experimentally by NII in 1954. There are 2 tables and 4 diagrams. There are no references.

AVAILABLE: Library of Congress

Card 13/13

JP/fal  
5-1-59



MATYASHEVICH, VV

AUTHOR: Sergeyev, A. S., Docent

105-58-4-30/37

TITLE: Dissertations (Dissertatsii)

PERIODICAL: Elektrichestvo, 1958, Nr 4, pp. 89 - 90 (USSR)

ABSTRACT: For the Degree of a Candidate of Technical Sciences, 1948 - 1954.  
At the Moscow Electromechanical Institute of Railroad Traffic Engineers (Moskovskiy elektromekhanicheskiy institut inzhenerov zheleznodorozhnogo transporta).  
N. M. Lomonosov, on April 28, 1948: "Method for the Determination of Soil Parameters in the Pylon Construction types of a Contact Network". Official opponents were: Doctor of Techn. Sciences Professor V. B. Medel' and Candidate of Technical Sciences I. I. Vlasov.  
M. Ye. Krest'yanov, on June 2, 1948: "Analysis of the Problem on the Selection of the Most Favorable Line Cross Section in the Contact Network". Official opponents were: Doctor of Technical Sciences Professor M. A. Petrov, Engineer K. S. Sal'nikov and Candidate of Economic Sciences Docent A. L. Lur'ye.

Card 1/4

Dissertations

105-58-4-30/37

V. V. Matyashevich, on June 23, 1948: "Influence of Traffic Organization on the Load of Substations and the Power Loss in the Contact Network". Official opponents were: Doctor of the Technical Sciences V. B. Medel', Engineer L. I. Gruber and Engineer L. M. Pertsovskiy.

G. V. Fominskiy, on June 23, 1948: "Improvement of the Characteristic of the Electrolocomotives BП-22 and BП 22M in the Case of Parallel Operation in a System of Many Units". Official opponents were: Doctor of Technical Sciences Professor K. G. Markvardt and Candidate of Technical Sciences S. M. Serdinov.

I. I. Kanter, on October 26, 1949: "Self-Exciting Threephase Invertors(Converter)". Official opponents were: Doctor of Technical Sciences M. A. Chernyshev and Candidate of Technical Sciences Docent G. G. Markvardt.

N. V. Lorents, on March 29, 1950: " Investigation of the Transition Processes in Traction Motors of D. C. Electrolocomotives". Official opponents were: Doctor of Technical Sciences Professor N. V. Gorokhov and Candidate of Technical Sciences P. N. Shlyakhto.

Card 2/4

Dissertations

105-58-4-30/37

I. I. Boneshevich, on June 28, 1950: " Influence of the Parameters and the Mode of Operation in Electric Railroads With Battery Car Transport on the Principal Structure of Automation Devices". Official opponents were: Doctor of Technical Sciences Professor V. B. Medel' and Engineer L. M. Pertsovskiy.

Ye. G. Gnitosyrov, on February 28, 1951: " Productivity and Capacity Analysis of Fuel- and Electric-Railroad Stoves". Official opponents were: Doctor of Technical Sciences P. K. Konakov and Doctor of Technical Sciences Professor N. V. Gorokhov.

V. A. Shilovskiy, on June 25, 1952: " Investigation of the Magnetic System of Traction Motors of Battery Cars (Section C<sup>P</sup>)". Official opponents were: Professor V. B. Medel' and Candidate of Technical Sciences Docent P. N. Shlyakhto.

N. S. Pomiluyko, on May 27, 1953: " Investigation of Electromagnetic Phenomena in the D.C. Traction Motor for the Purpose Extending the Control Properties and for Determining the Possibility of a Voltage Increase". Official opponents were: Doctor of Technical Sciences Professor Ye. N. Nitsov

Card 3/4

Dissertations

105-58-4-30/37

and Doctor of Technical Sciences Professor K. G. Markvardt.  
V. N. Pupynin, in January 1954: "Protection of the Contact  
Network of Electric Railroads Against Short-Circuit Currents".  
Official opponents were: Doctor of Technical Sciences M. A.  
Chernyshev and Candidate of Technical Sciences Docent I. Ya.  
Ryzhkovskiy.

AVAILABLE: Library of Congress

1. Electrical engineering-Reports

Card 4/4

MATYASHEVICH, V.V.

Formation of mercury condensate in operating rectifiers. Izv.  
NIIFT no.3:31-42 '58. (MIRA 12:1)  
(Mercury-arc rectifiers)

S/196/62/000/004/010/023  
E194/E155

AUTHORS: Volosevich, V.S., Matyashevich, V.V., and Ptitsyn, S.V.

TITLE: Measuring the mercury-vapour density in the anode spot of a high-voltage valve

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, no.4, 1962, 8, abstract 4 E47. (Izv. N.-i. in-ta postoyan. toka, no.7, 1961, 14-25).

TEXT: In high-voltage mercury valves intended for transmitting d.c. power there are considerable variations in the distribution of mercury-vapour density. The vapour density was measured in different parts of an operating valve by measuring voltage variations on a small probe. In its initial form this method was suitable only for measuring the density in the immediate neighbourhood of the main arc. However, it is of great interest to measure the vapour density in the trans-anode region which has an important influence on the electric strength of the valve. For such measurements, V.I. Yemel'yanov developed a small probe with local ionisation, with an incandescent cathode and an additional annular anode. The discharge current in the

Card 1/2

Measuring the mercury-vapour ....

S/196/62/000/004/010/023  
E194/E155

additional anode circuit was maintained at  $70 \pm 5$  mA. At full load the vapour density in the trans-anode region was found to be 3.5 microns in valve type BP-9 (VR-9) and 4.1 microns in valve type BPH-58 (VRN-58) instead of the value of 1.2 microns which corresponds to the cooling oil temperature. The high vapour-density is apparently associated with the circumstance that the discharge is accompanied by longitudinal and transverse pressure gradients. The cathode chamber walls being at comparatively low temperature, large drops of mercury condense on them. On falling, these drops can lead to a temporary rise in the vapour density and to reduction in the electric strength of the valve. The reliability of high-voltage valves should be increased by raising the wall temperature of the anode spot as compared with existing designs, for example, by additional external heating.

[Abstractor's note: Complete translation.]

Card 2/2

MAYSTRENKO, Yuriy Gordeyevich: ALMAZOV, A.M., doktor' geogr.  
nauk, otv. red.; MATYASHEVSKAYA, T.I., red.

[Organic matter of the water and bottom sediments of rivers  
and bodies of water of the Ukraine; the Dnieper and Danube  
watersheds] Organicheskoe veshchestvo vody i donnykh otlo-  
zhenii rek i vodoemov Ukrainy; basseiny Dnepra i Dunaia.  
Kiev, Naukova dumka, 1965. 238 p. (MIRA 18:9)



IVANOV, Vadim Nikolayevich, akademik; MAKARCHENKO, A.F., prof.,  
akademik, otv. red.; BURCHINSKIY, G.I., prof., red.;  
PELESHCHUK, A.P., prof., red.; PUTILIN, N.I., prof., red.;  
REVUTSKIY, Ye.L., st. nauchn. sotr., red.; SKOPICHENKO,  
N.F., dots., red.; CHEBOTAREV, D.F., prof., red.;  
OMEL'CHENKO, A.T., st. nauchn. sotr., red.; MATYASHEVSKAYA,  
T.I., red.

[Selected works] Izbrannye trudy. Kiev, Naukova dumka,  
1965. 334 p. (MIRA 18:8)

1. Deystvitel'nyy chlen AMN SSSR (for Ivanov). 2. AN Ukr. SSR  
(for Makarchenko, Ivanov). 3. Chlen-korrespondent AMN SSR  
(for Chebotarev).

VLASYUK, P.A., akademik, otv. red.; MATYASHEVSKAYA, T.I., red.

[Plant nutrition and fertilization] Pitanie i udobrenie  
rastenii. Kiev, Naukova dumka, 1965. 251 p.  
(MIRA 19:1)

1. Akademiya nauk URSR, Kiev. 2. Institut fiziologii ra-  
steniy AN Ukr.SSR (for Vlasyuk).

MATYASHIN, I.M.

MATYASHIN, I.M. (Stelino)

"What a physician should know about blood groups" by N.I.Blinov.  
Reviewed by I.M.Matiashin. Nov.khir.arkh. no.3:87-88 My-Je '57.  
(BLOOD GROUPS) (BLINOV, N.I.) (MIRA 10:8)

**MATYASHIN, I.M., assistant**

**Clinical observations of transfusions of heterogenous serum. Preliminary report. Vop.perel.krovi 4:186-191 '55. (MIRA 9:12)**  
**(SERUM THERAPY)**

MATYASHIN, I.M., kand. med. nauk (Stalino, prosp. Gurova, d. 9, kv. 9)

A case of primary sarcoma of the thyroid gland. Nov. khir. arkh.  
no.2:116-118 Mr-Apr '59. (MIRA 12:7)

1. Propedevticheskaya khirurgicheskaya klinika (sav. - prof. A. I.  
Charugin) Stalinskogo meditsinskogo instituta.  
(THYROID GLAND--CANCER)

MATYASHIN, I.M., dots. (Donetsk, prospekt Gurova, d.9, kv.9)

Formation of an esophagus from a segment of the large intestine.  
Nov.khir.arkh. no.4:16-21 '62. (MIRA 15:5)

1. Kafedra obshchey khirurgii (zav. - dots. A.M. Ganichkin)  
lechebnogo fakul'teta Donetskogo meditsinskogo instituta.  
(~~ESOPHAGUS—SURGERY~~) (~~INTESTINES—TRANSPLANTATION~~)

MATYASHIN, I.M., dotsent

Perniciosiform anemia linked to the exclusion of the stomach  
in total esophagoplasty with the use of a small intestine.  
Khirurgiia 40 no.3:66-70 Mr '64. (MIRA 17:9)

1. Klinika obshchey khirurgii lechebnogo fakul'teta (zav.- prof.  
A.M. Ganichkin) Donetskogo meditsinskogo instituta na baze  
Donetskoy oblastnoy klinicheskoy bol'nitsy imeni M.I. Kalinina  
(glavnyy vrach V.F. Zubko).

MATYASHINA, O. M.

"The Therapeutic Value of Calcined Bread in the Treatment of Phlyctenulosis of the Eyes." Cand Med Sci, Khar'kov Medical Inst, Khar'kov, 1955. (KL, No 2, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)



MATYASHINA, O.M., kand.med.nauk

Use of dicoumarin in thrombosis of the central vein of the  
reticular membrane. Oft.zhur. 13 no.3:142-147 '58 (MIRA 11:6)

1. Iz glaznogo otdeleniya (zav. - professor I.F. Kopp) Tsentral'noy  
klinicheskoy bol'nitsy Stalinskoy oblasti.  
(RETINA--BLOOD SUPPLY)  
(COUMARIN)  
(THROMBOSIS)

MATYASHINA, O.M., kand. med. nauk

Rare case of a foreign body lodged in both orbits. Oft. zhur. 14 no.2:  
122 '59. (MIRA 12:7)

1. Iz Stalinskogo nauchno-issledov. instituta travmatologii, ortopedii  
i protezirovaniya.  
(ORBIT (EYE)--FOREIGN BODIES)

MATYASHINA, V. M.

Diagnostic value of the reaction of determining the ether-soluble bilirubin in infectious hepatitis and tumors of the liver.  
Vrach. delo no.6:102-105 Je '62. (MIRA 15:7)

1. 2-ye infektsionnoye otdeleniye (zav. - dotsent S. L. Erez)  
Donetskoy oblastnoy klinicheskoy bol'nitsy imeni Kalinina.

(BILIRUBIN) (HEPATITIS, INFECTIOUS)  
(LIVER--TUMORS)

MATYASHOV, V.A.

Improved ventilation system in hydrolysis plants. Gidroliz. i  
lesokhim.prom. 18 no.4:24 '65. (MIRA 18:6)

1. Proyektpromventilyatsiya.